

WHAT IS CLAIMED IS:

1. A liquid crystal display device comprising a liquid crystal panel, a backlight which includes an optical sheet facing one main surface of the liquid crystal panel in an opposed manner, a mold case which houses the backlight therein, and a metal frame which forms a picture frame for exposing an effective display area of the other main surface of the liquid crystal panel and has side walls which are engaged with side walls of the mold case, wherein

a columnar member which settles the liquid crystal panel at a given position is formed on a periphery of the mold case, and

an opening is formed at a side portion of the optical sheet which corresponds to the periphery of the mold case, and the optical sheet is held on the mold frame by allowing the columnar member to pass through the opening.

2. A liquid crystal display device according to claim 1, wherein the optical sheet includes at least one light diffusion sheet or at least one prism sheet, and the opening of the optical sheet is formed in a projecting portion which is formed on the periphery of the optical sheet.

3. A liquid crystal display device according to claim 2, wherein a recessed portion is formed in the peripheral portion of the mold case and, the columnar member is mounted on the recessed portion, and the projecting portion of the optical sheet is accommodated in the recessed portion.

10020976-121901  
T06T01" 9260200T

4. A liquid crystal display device according to claim 1,  
wherein the columnar member of the mold case is allowed to pass  
through the opening formed in the optical sheet and the optical  
sheet is fixed to the periphery of the mold case where the  
5 columnar member is mounted using an adhesive tape.

5. A liquid crystal display device according to claim 1,  
wherein an optical sheet holding structure which loosely holds  
the optical sheet compared to the columnar member is provided  
to at least one of other peripheries of the mold case which  
10 are arranged close to or opposite to the periphery of the mold  
case on which the columnar member is mounted.

6. A liquid crystal display device according to claim 5,  
wherein the optical sheet holding structure includes other  
columnar member which is formed on one of the other peripheries  
15 of the mold case and other opening which is formed in the  
periphery of the optical sheet along at least one of other  
peripheries of the mold case, and

the other columnar member is arranged to loosely pass  
through the other opening compared to the passing through of  
20 the columnar member to the opening.

7. A liquid crystal display device according to claim 5,  
wherein the optical sheet holding structure includes other  
recessed portion which is formed in one of the other peripheries  
of the mold case and other projecting portion which is formed  
25 on the periphery of the optical sheet to be seated in the other  
recessed portion.

8. A liquid crystal display device according to claim 7,  
wherein the optical sheet holding structure is provided with  
a disengagement restriction member which restricts the  
disengagement of the other projecting portion of the optical  
5 sheet from the other recessed portion of the mold case.
9. A liquid crystal display device according to claim 1,  
wherein the columnar member is integrally formed with the mold  
case.
10. A liquid crystal display device according to claim 1,  
10 wherein the columnar member is formed separately from the mold  
case and is fitted into a hole formed in the mold case.
11. A liquid crystal display device according to claim 1,  
wherein the size of the columnar member differs between a  
portion thereof for holding the optical sheet and other portion  
15 thereof in the direction opposite to one of the main surfaces  
of the liquid crystal panel.
12. A liquid crystal display device comprising a liquid  
crystal panel, a backlight which is arranged to face a first  
main surface of the liquid crystal panel in an opposed manner,  
20 an optical sheet which is arranged between the first main  
surface of the liquid crystal panel and the backlight, a first  
frame which accommodates the backlight, and a second frame  
which is formed in a picture frame and covers a periphery of  
a second main surface of the liquid crystal panel which faces  
25 the first main surface and at least a portion of a side surface  
of the mold case, wherein

the periphery of the first frame includes a first pair of sides which face each other in an opposed manner and a second pair of sides which extend in the direction intersecting a first pair of sides and face each other in an opposed manner,

5           at least one first columnar member is mounted on one of a first pair of sides of the main surface of the first frame which faces the second frame in an opposed manner,

10           at least one second columnar member is mounted on one of a second pair of sides of the main surface of the first frame which faces the second frame in an opposed manner,

15           a first opening into which the first columnar member is fitted is formed in a periphery of the optical sheet which faces one of a first pair of sides of the first frame and a second opening into which the second columnar member is fitted is formed in a periphery of the optical sheet which faces one of a second pair of sides, and

20           a portion of the first columnar member which faces a side surface of the liquid crystal panel in an opposed manner is projected toward a side surface of the liquid crystal panel than other portion which is fitted into the first opening of the first columnar member.

13.       A liquid crystal display device according to claim 12, wherein a bank having a surface which faces a side surface of the backlight is formed on one of a first pair of sides of the main surface of the first frame which faces the second frame in an opposed manner and the first columnar member is formed on this bank.

25

14. A liquid crystal display device according to claim 13,  
wherein the periphery of the portion of the bank where the first  
columnar member is formed is formed such that the periphery  
is indented toward the main surface of the first frame which  
5 faces the second frame.

15. A liquid crystal display device according to claim 12,  
wherein the second opening of the optical sheet is formed in  
the projecting portion of the optical sheet which is projected  
from the side of the optical sheet which faces one of a second  
10 pair of sides of the first frame toward one of a second pair  
of sides.

16. A liquid crystal display device according to claim 15,  
wherein on one of a second pair of sides of the main surface  
of the first frame which faces the second frame in an opposed  
15 manner, a projecting portion which is formed closer to the side  
surface of the liquid crystal panel than the second columnar  
member is mounted.

17. A liquid crystal display device comprising a liquid  
crystal panel, a backlight which is arranged to face a first  
20 main surface of the liquid crystal panel in an opposed manner,  
an optical sheet which is arranged between the first main  
surface of the liquid crystal panel and the backlight, a first  
frame which accommodates the backlight, and a second frame  
which is formed in a picture frame and covers a periphery of  
25 a second main surface of the liquid crystal panel which faces  
the first main surface and at least a portion of a side surface  
of the first frame, wherein

the periphery of the first frame includes a first pair of sides which face each other in an opposed manner and a second pair of sides which extend in the direction intersecting a first pair of sides and face each other in an opposed manner,

5           at least one first columnar member is mounted on one of a first pair of sides of the main surface of the first frame which faces the second frame,

10           a projecting member which faces a side surface of the liquid crystal panel is mounted on one of a second pair of sides of the main surface of the first frame which faces the second frame in an opposed manner,

15           a fitting member which is fitted into a periphery of the optical sheet is mounted on the other of a pair of the first sides of the main surface of the first frame which faces the second frame in an opposed manner,

20           a first opening into which the first columnar member is fitted is formed in a periphery of the optical sheet which faces one of a first pair of sides of the first frame and a fitting portion into which the fitting member is fitted is formed in a periphery of the optical sheet which faces the other of a first pair of sides, and

25           a portion of the first columnar member which faces a side surface of the liquid crystal panel is more projected toward the side surface of the liquid crystal panel than other portion of the first columnar member which is fitted into the first opening.

18. A liquid crystal display device according to claim 17,  
wherein at least one of fitting members formed in the first  
frame is formed of the second columnar member and the fitting  
portions formed in the optical sheet are formed at least one  
5 of second openings into which the second columnar members are  
fitted into.

19 A liquid crystal display device according to claim 17,  
wherein a bank having a surface which faces a side surface of  
the backlight is formed on the other of a pair of the first  
10 sides of the main surface of the first frame which faces the  
second frame in an opposed manner,

the fitting member formed in the first frame is formed  
as a recessed portion by indenting the bank toward the main  
surface of the first frame which faces the second frame in an  
15 opposed manner, and

the fitting portion formed in the optical sheet is  
formed as a projecting portion which is projected from a side  
of the optical sheet which faces the other of a pair of the  
first sides of the first frame to the other of a pair of the  
20 first sides of the first frame.

20. A liquid crystal display device according to claim 12,  
wherein a portion of the second columnar member which faces  
the side surface of the liquid crystal panel is projected toward  
the side of the liquid crystal panel than other portion of the  
25 second columnar member which is fitted into the second opening.

21. A liquid crystal display device comprising a liquid  
crystal panel, a backlight which is arranged to face a first

main surface of the liquid crystal panel in an opposed manner,  
an optical sheet which is arranged between the first main  
surface of the liquid crystal panel and the backlight, a first  
frame which accommodates the backlight, and a second frame  
5 which is formed in a picture frame and covers a periphery of  
a second main surface of the liquid crystal panel which faces  
the first main surface and at least a portion of a side surface  
of the first frame, wherein

the periphery of the first frame includes a first pair  
10 of sides which face each other in an opposed manner and a second  
pair of sides which extend in the direction intersecting a first  
pair of sides and face each other in an opposed manner,

at least one first columnar member is mounted on one  
of a first pair of sides of the main surface of the first frame  
15 which faces the second frame in an opposed manner,

at least one second columnar member is mounted on one  
of a second pair of sides of the main surface of the first  
frame which faces the second frame in an opposed manner,

a first opening into which the first columnar member  
20 is fitted is formed in a periphery of the optical sheet which  
faces one of a first pair of sides of the first frame and a  
second opening into which the second columnar member is fitted  
is formed in a periphery of the optical sheet which faces one  
of a second pair of sides of the first frame, and

25 the first columnar member and the second columnar member  
include portions which face the side surface of the liquid  
crystal panel in an opposed manner.



22. A liquid crystal display device according to claim 21,  
wherein driving circuits of the liquid crystal panel are  
respectively mounted on peripheries along the other of the  
first pair of sides and the other of the second pair of sides  
5 of the first frame of the liquid crystal panel, and the driving  
circuits of the liquid crystal panel are not mounted on  
peripheries along one of the first pair of sides and one of  
the second pair of sides of the first frame of the liquid crystal  
panel.

10 23. A liquid crystal display device according to claim 12,  
wherein the second opening is formed into a shape extending  
along one of a second pair of sides of the first frame compared  
to the first opening.

15 24. A liquid crystal display device according to claim 12,  
wherein the periphery of the first frame along a pair of the  
second sides is more elongated than the periphery of the first  
frame along a pair of the first sides.

10020976-121901